
TOWARDS THE REVIVAL OF A DYING WISDOM: A CASE OF TEMPLE BUILDING TRADITION OF ODISHA

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Abstract: Odisha is widely recognized for the many magnificent and colossal stone temples as examples of its spectacular architecture, the creative brilliance of its skilled stone craftsmen, and their exquisite craftsmanship. Over the years, the temples that are the repository of an indigenous knowledge system and central to the state's architectural identity have been damaged by vagaries of nature and in dire need of conservation. However, the major predicament in administering effective conservation measures is that the state has a shortage of skilled stone craftsmen with expertise in temple building. Due to lack of patronage and official recognition, leading to low socioeconomic status, many skilled artisans have either migrated to other states or opt for different professions. Traditional stone craftsmanship, which in the past has been handed down from generation to generation in unbroken continuity, is one of the most valued, but now threatened assets. Through this paper, an attempt has been made to understand the role of craftsmen in temple building and their knowledge dissemination network in historical context, understand their status and extent of expertise in the current environment, assess the cause and magnitude of the deficiency. This paper proposes to revive the wisdom through reconstituting the master-apprentice relationship and re-engaging the craftsmen within conservation and construction industries with institutional support.

Keywords: Traditional Knowledge, Conservation of Traditional Skill, Stone Craftsmanship, Temple Construction.

Introduction: Hemmed in by the sea and ranges of hills and forests, the state of Odisha was more or less immune from foreign aggression. This allowed a distinctive culture of her own to evolve. Odisha seems to have been among the first areas to pursue the construction of stone temples on a large scale. Starting from 6th century AD, a whole series of stone temples were built in Odisha. (Dahejia, 1979) With exquisite carving on the exteriors and completely unadorned interiors, the local style of Odia temples implies a strong architectural tradition and the existence of a line of temple architects and sculptors following an established convention. Possessing over 3000 unprotected, 78 ASI protected, and 295 monuments of state importance, a majority of which are temples, the biggest problem Odisha is facing to administer effective conservation measures is a dearth of skilled stone craftsmen with expertise in temple building. Many of the unskilled craftsmen and professionals are employed in conservation projects which result in removal, replacement, and alteration of character defining elements. This alarming situation unquestionably demands knowledge that is not just available in theory, but practical knowledge acquired through years of training. In this condition, who can be the better provider of this knowledge than the traditional temple architect or the Sthapati? Though in the past the state had many stone artisans trained in temple building, very few remain in the profession as on date. Less demand in stone temple building, lack of official recognition and low wages in conservation projects, poor socioeconomic status, forced them to opt for a change in profession or migrate to states like Rajasthan, Gujarat or Tamilnadu where they get regular work opportunity.

In this regard, Odisha State Archaeology Department of Culture in collaboration with the World Bank funded Integrated Coastal Zone Management Project (ICZMP) under the Ministry of Environment and Forest organized a capacity building program in 2013 and prepared a training manual in both English and Odia language. Attended by about 35 craftsmen, this effort made by the state government is quite laudable but it lacks clarity in various aspects to provide a long term solution.

As defined in the UNESCO 2003 Convention, conservation should not just look at physical characteristics of historic buildings but also consider its intangible aspect. It is as important to conserve and document traditional craftsmanship, as it is to preserve traditional architecture. Moreover, an effective way towards it is

to identify the knowledgeable tradition bearers and practitioners; encourage them to transmit their knowledge and skills to the younger generations; provide them with a steady income.

In consideration of above discussion, the study attempts to understand: the origin and development of the craft, the role of craftsmen in temple building, methods of knowledge dissemination in both present and historical context. It also investigates the issues associated with the dearth of skilled artisans; proposes strategies to revive the wisdom through reconstituting the master-apprentice relationship and re-engaging the craftsmen with institutional support.

Methodology: This study is based on primary and secondary data sources. Secondary sources provided an overall understanding of the stone craft organization, location of these stone craft communities, their origins and development through years. A qualitative research method with open ended questions was adopted for the field survey.¹ From the stone quarry workers to the master craftsmen, officials of ASI and state archaeology were interviewed to understand craftsmen's status in the present context and existing management system.

Understanding The Temple Building Tradition In Historical Context:

Origin and Development: It was during Mauryan rule that Odia art and architecture developed in an organized form and a change from wood to stone had happened. The elephant at Dhauli carved out of a boulder containing Ashokan edict represent the earliest specimen of stone sculptural art in Odisha. A plethora of images of Buddha, Bodhisattva, Tara, and the stupa at the oldest Buddhist site, Lalitgiri, took the craftsmanship to a step forward towards perfection. After Mauryan period, it is Kharvela's patronage that led to the excavation of caves in Khandagiri and Udayagiri, in which, stone craft reached a stage of development and considerable maturity and set the trends to be followed on temples of the later period. Odia temple architecture expressed itself in three distinct forms: the Rekha with a curvilinear tower, the Pidha with a series of receding tiers resembling a stepped pyramid, the Khakhara with a vaulted roof. Though the early forms of Rekha and Pidha might have been modeled on the North Indian Shikhara and Chalukyan architecture respectively, the developed specimens like Lingaraj, Jagannath, and Konark temples are purely Odia development. The same is also true of the Khakhara which while bearing a close resemblance with the Rathas of Mahabalipuram, evolved its own Odia characteristics by a double roof as in Vaitala temple of Bhubaneswar or a series of structural spires in Varahi temple of Puri.

The evolution of temple forms speaks for the creative design abilities of the Odia craftsmen and gives an idea about the knowledge of geometry that the craftsmen used to possess. It also demonstrates how with simple techniques of repetition, juxtaposition, and understanding of the law of gravity they were able to create complex forms and stable structures.

The Craftsman's Role in Temple Building: The construction of the temple is a complex and creative process which requires sound, scientific, multidisciplinary understanding. Ancient Shilpa Shastras talks about four types of stone craftsmen involved in a temple construction; Sthapati, Sutragrahani, Takshaka, and Bardhakin.

Sthapati plays a significant role in temple building. Selected by the Karta or the King himself, he should possess knowledge of Shilpa Shastras, the traditional sciences, mathematics, and Puranas, painting, music, and yoga. The Sthapati's work starts with selecting an efficient team comprising of stone craftsmen, black smiths, carpenters, and other workmen. He estimates the budget according to the scale of the temple the King intends to construct and the initial conceptualization of the design. Considering the rules mentioned in Shashtras, he selects an appropriate site and then works out an efficient transport network to bring stones to the construction site either by land or water route. Once the site cleaning, leveling is done and the materials are ready, he along with the Brahman places the temple with respect to the universe, of which, it is a part. He then does the soil test, Sanku Sthapana, and Nagabandhana² to decide the exact location and orientation of the temple. A scaled model is then prepared for the King's approval. He then draws the ground layout according to Vastu Purusha Mandala and proceeds to develop the vertical and horizontal dimensions of the temple and oversees the work of stone carving and modeling.

Sutragrahani, the Engineer who is usually the son or chief disciple of the Sthapati. His role is to perform all the work assigned by the Sthapati, be an expert in all sorts of work and should have the understanding of proportional measurement by the chord and the rod, as applied to the whole building and its parts.

There are two types of stone craftsmen who work for the temple, one who is a carver and the other is the modeler. The carvers are called **Takshaka**, and they should possess knowledge on properties of different types of stones and the time, and technique required to carve them.

The modelers are called **Bardhakin**, they assemble the stone and build the structure under the strict supervision of Sutragrahani. Bardhakins possess knowledge on load distribution, structural movement, the law of gravity, etc. Apart from stone craftsmen, there are people like carpenters who work on wood, black smiths who do iron casting, other workers who do leveling and cleaning of ground, erecting the scaffolding, transporting the stones, managing camp, and accounts.

Network of Knowledge Dissemination: There are two indigenous institutions which played a considerable role in the development of temple architecture and dissemination of knowledge through generations: the Guilds and the Shilpa Shastras. While the Guilds are crucial in imparting practical knowledge, Shilpa Shastras in the form of codified texts guides the craftsmen to understand the form and symbolic meaning, the formulas of scale, proportion, and orientation. The Guilds in Odisha were a very ancient organization, known to have been in existence since Mauryan rule. The guild binds the craftsmen together as it forms a community of masters and apprentices. Quality and ethical codes of work are transmitted through guilds ensuring continuity, while also allowing for creative developments through partnerships and community participation. Having an experienced master craftsman or Sthapati as the head, Guilds provide training to the young generation right on the temple construction site and the training time lasted for almost ten years. The Pedagogical strategies used in the Guilds are: learning through concrete experience (training), reflective observation, abstract conceptualization, active experimentation (on-site). This includes initial imitation of master's skills and techniques, later processing of information and developing skills and then finally developing a characteristic or a signature style to become the master architect and develop own Philosophy and carry on this cycle of teaching learning process. (Dhanorkar, 2017).

It is worth mentioning here that there was also a conscious effort made by the patrons to promote the tradition of temple building and preserve the knowledge for future generation. In the 17th century during the time of Mughal rule, there was a gradual erosion of traditional temple building skills in Odisha. Considering the severity of the situation, Raja Purushottam Deva ordered to record detailed architectural measurements of three famous temples: Lingaraj, Jagannath, and Mahabhaskara temple; extended his patronage to the author of Shilpa Ratnakosa. The reason behind this is to let the future generation understand the temples in all their parts and to assist them in the construction of temples following the same age old prescriptions and rules.

Present Status:

Overview of Stone Craft Clusters: It is interesting to notice that villages of stone craftsmen communities are located either near ancient temple sites, or sites of Jain and Buddhist establishments or stone quarries. Though in many places people have stopped practicing this craft below are the places where it is still in practice:

Puri: The stone craft tradition in Puri, the land of Lord Jagannath, dates back to 10th century AD. The settlement named Pathuriasahi that used to have an active concentration of skilled craftsmen is now having roughly around 100 stone artisans including those who are under training. Here two to three families work together under one shade and are mainly engaged in souvenir making. Temple building is a dying tradition, though some of the old craftsmen make sculptures using the traditional rules. The number of them is too less in comparison to the souvenir makers who just copy the design without knowing the rules. According to the Master craftsman Shyam Sundar Mahapatra, the biggest problems in continuing the tradition are: lack of demand for the stone temples, lack of recognition by the Government, low wages and no-decision making status at conservation works. Another problem with conservation work is it does not guarantee year round employment; craftsmen have to sit idle when work is not going on. Younger generation prefers other professions or prefers to make soft stone souvenirs which are in demand amongst tourists and help them earn a decent living. Other skilled craftsmen Ashok Mahapatra, Rabindra Maharana, Narasingha Maharana, and Madanmohan Maharana also expressed the same concern. Traditionally known for their sandstone and granite skills craftsmen of Puri now prefer to work on soft soapstone; it is easier to learn the skill and takes less time to produce intricately carved products. Very few people are involved in temple repair work but as daily labors.

Konark: Near about 150 Craftsmen reside in Konark near Sun Temple. Most of them have migrated from places like Puri, Bhubaneswar in the 1970's because of the tourist traffic which enhanced stone product sales. Most of the craftsmen here are engaged in souvenir making because of the high tourist inflow; very few prefer

to work in temple sites. These people previously belonged to the Blacksmith community and learned stone sculpting through practice. They are not much aware of the traditional techniques of temple building and sculpture making.

Tapang: The cluster in Tapang, an ancient sandstone quarry site, dates back to around 6th / 7th Century AD. About 25-30 craftsmen are living in this village, very few skilled and mostly semi-skilled; none of them possess traditional knowledge of temple construction. They make items for domestic use and sell them at village markets. Some work at the quarry site while others work at home. Few of them make sculptures which they sell through the middlemen in Bhubaneswar. Many skilled craftsmen have migrated to other places in search of better work that could improve their low socioeconomic status.

Khandagiri: Around 30 artisans reside near the twin hills of Khandagiri and Udayagiri. These rock-cut caves were constructed around first and second century BC during Kharvela's rule. Stone craftsmen who worked on those cave sanctuaries eventually settled down there. Craftsmen of this place are engaged in sculpture making and temple carving as well as temple construction. The guild system still exists here; many of the present day craftsmen are trained under Sthapati Late Kulamani Ojha. Sthapati Purnananda Ojha, Bramhananda Ojha, Achutyananda Ojha, Nityananda Ojha, and Bichitrananda Ojha are the prominent ones who not only possess knowledge of temple construction prescribed in Shastras but also practice it. They are not involved in temple conservation work as they do not just want to work as construction labors and earn wages that are very low compared to what they make otherwise.

Old Bhubaneswar: Temple town Bhubaneswar has many ancient stone temples in its old town area which is also home to a majority of stone craftsmen. The craftsmen residing here trace their origin back to 7th century AD when the temple construction activity started to gain prominence. Since Bhubaneswar is dotted with temples, there is always some amount of temple conservation work going on, but craftsmen here prefer to engage themselves in sculpture and souvenir making rather than getting involved in conservation work. This results in unskilled craftsmen getting employed in conservation works. In the opinion of Padma Vibhushan Shri Raghunath Mahapatra, the primary reason of skilled craftsmen not taking an interest in conservation works is the no-decision making status. The guild system has completely died out and craftsmen prefer to work individually or with their own family. Being a capital city Bhubaneswar provides the opportunity for craftsmen to sell their sculptures, architectural elements, and souvenirs at a decent price and the income are more than what they get in temple repair works. Training and creative centers opened by Sthapati Shri Raghunath Mahapatra and Master Sculptor Padmashri Shri Kulamani Sahoo are significant initiatives in reviving the Guild system of learning and dissemination of traditional knowledge.

Lalitgiri and Sukhuapada: Lalitgiri and Sukhuapada are two small villages in the foot hills of Lalitgiri hills. It is the site of ancient Buddhist center, which was in occupation since 2nd century BC. Around 300 craftsmen reside here, and they are involved in temple construction, sculpture, and stone carving, making of items of domestic use like the manual stone grinder and products like ashtrays and fountains, etc. Guild system is continued here with Sthapati Patitapabana Maharana, Premananda Maharana giving training to the younger generation under the guidance of Sthapati Arakhita Maharana. They strictly follow the traditional rules of Shilpa Shastras while making sculptures and constructing temples. Many of skilled craftsmen have migrated to states like Rajasthan and Gujarat for better work opportunities. Some of the Master craftsmen contribute to the temple conservation works because of the official recognition they got in the early years.

Mathura: The village Mathura in the district of Ganjam is historically famous for its stone carving skills. There are about 100 craftsmen in and around Mathura village working on sculptures and items of domestic use. This village lies at the base of Hatibari hill from where the stone is quarried. Sandstone is procured from this hill by craftsmen who quarry the stone themselves. Items for local use like utensils and grinders are sold at village markets, while sculptures of idols are sold to temples within the district. As stated by Sthapati Nirmal Maharana many skilled craftsmen have migrated to other states as the district can absorb only a limited amount of stone craft. Very few Master craftsmen who possess knowledge of Shilpa Shastras and construction techniques of temple go out for temple building activities.

Khiching: Khiching is the ancient capital of Bhanja Rulers and ancient temple site. Stone craft in this village dates back to the ninth century. Presently some 30-40 craftsmen including skilled and semi-skilled are involved in the stone craft. From Soap-Stone, sand stone and granite, stone carvers intricately engrave smaller

replicas of temples, statues of gods & goddesses. Some craftsmen are involved in temple repairing work, and many migrated to other states for a better job opportunity.

Odagaon and Khandapara: These ancient temple sites in the district of Nayagarh are also home for many stone craftsmen. Around 50-60 craftsmen reside here. Most of them are involved in souvenir making. Few of them like Master craftsman Kirtan Maharana, Gagan Maharana possess knowledge of temple construction. They go outside of the district for work as no major construction work happens in the district.

Baulagadia: Around 30 craftsmen reside in this ancient temple site of Balasore. It has become a center for lathe turned soapstone cooking vessels which are sent to Puri, Gaya, Varanasi, and Kolkata and also used locally. Very few people are involved in sculpture making. However, they do not follow traditional image making rules. Stone modelers are very few; they mostly work as construction labors.

Existing Skills and Knowledge: The ancient wisdom of temple building survives at places like Khandagiri, Lalitgiri, Sukhuapada, where the traditional guild system is still prevalent. Here the apprentices stay with the Master craftsman; work in the workshops and gradually pick up the skill. The apprentices are not paid any wage, but provided with free lodging and boarding facility till they contribute significantly to the production process. It takes around a year to the apprentices to learn to chisel the stone surface correctly. Over time they make increasingly accurate guesses about how the material will behave. Each repetition reinforces the sense of familiarity and increases the command over the work. In other places like Puri, Konark, Tapang, etc. concentration of skilled craftsmen is less, and they are mostly into carving. The skilled carvers draw on a piece of stone and do the initial carving. This is considered as the most crucial stage in the production which determines the overall quality of the product. The less skilled persons take over from here and deepen the carvings according to requirement. Craftsmen of Konark, Puri, and Bhubaneswar draw inspiration from the temples that surround them and produce a copy of the prominent sculptures, namely Alasa Kanyas, Salabhanjikas, Surasundaris, Gajasimha, etc. In places like Mathura, Odagaon, Khandapara, Baulagadia which have the low concentration of skilled craftsmen with expertise in traditional sculpture making, artisans reproduce the figurines taking reference from the photographs. Odisha once used to possess finest sandstone skills, but because of the high demand of soft stone souvenirs, the talent is fading.

Summary of Issues: It is noticed that one of the major causes of loss of traditional practices in many of these ancient stone craft centers is due to the disintegration of the guild system. The disintegration gave way to individual practice or practice in small groups, which increased the competition to earn a decent living. Quality and variety suffer in this process as workers succumb to the pressure to produce more. Those who strictly follow traditional rules and focus more on quality and creativity lead a poorer life as they fail to produce in quantity. Craftsmen do not want to share the small local market with new people that conflict with the desire for the skill not to die out. In a nutshell, financial strain affects both the tangible and the intangible aspects of the craft. The learning process comes under threat as it becomes harder to finance apprentices as the apprenticeship period is long, and those who might have continued practicing the craft migrate to other places or seek other jobs, thus, breaking the chain of transmission. The common perception that those who fail at school or belong to low socioeconomic strata undergo vocational training discourages younger generation to continue with the traditional occupation. Due to lack of patronage and decrease in demand for temple construction, skilled artisans who once used to hold a prominent position in the society have reduced down to mere utensil or souvenir makers and lost their social status. It is unfortunate that now at many places the community of stone craftsmen labeled as lower caste.

Even after putting a lot of effort State Department of Archaeology is unable to bring skilled people on board. A major reason of which is no official recognition and no-decision making status in conservation projects. The existing system has created a gap between architects/engineers and craftsmen and degraded their status as construction laborers. Few craftsmen who work on conservation projects get wages which are too low compared to the hard work they put into. Adding on to their plight as conservation work do not guarantee year round employment and pay on a day-to-day basis, craftsmen sit idle when there is no work going on. An important point to consider here is that the traditional knowledge bearers belong to the aged population which increases the severity of the problem and calls for an immediate action.

Conclusion and Recommendation: The study indicated that the immediate challenge in the temple conservation field is to overcome the skills gaps and develop the traditional stone craftsmanship knowledge

base to ensure that the workforce is properly equipped and conversant with principles of temple building and has the expertise, ability to carry out conservation work to the highest possible standard. Addressing the issues following are few strategies which could help revive the ancient wisdom and ensure long term sustainability:

Traditional Craftsmen Register: The first step is to identify the craftsmen with knowledge of temple building and give them deserved recognition. Unlike the current scenario, the identification process should start from the village/block level. Selection should be done on the basis of having knowledge of materials, tools and various techniques, proportional system, knowledge of structural behavior, iconographic principles, etc. A database of the craftsmen should be prepared, describing their expertise and knowledge domain. This database should be made available in the public sphere.

Creation of Heritage Skills Development Centre (HSDC): The state Government should create a Heritage skills development center, which will act in close association with State Department of Archaeology, ASI, Architecture schools, Kalinga Shilpi Mahasangha, INTACH, and other heritage custodians. With an aim to develop a high-quality skilled workforce and dedicated resource center, HSDC will research, analyze, and document traditional building skills, provide skill training and disseminate knowledge through workshops and capacity building programs, create employment opportunities and engage the craftsmen with in conservation and construction industry. Having Master craftsmen, Architects, Conservationists on board to train the craftsmen on various aspect of temple building and principles of conservation, the center would reconstitute the master-apprentice relationship and provide an excellent learning platform for young artisans, architecture students, and other professionals. Apart from this HSDC would identify the agencies, both domestic and foreign, which can help in arranging funds and getting international financial assistance.

Training Programs and Workshops for Knowledge Dissemination: Unlike the current practice, the training programs and workshops would not only aim at educating traditional craftsmen but all other professionals who are associated with conservation work. Training programs will target three groups: a) craftsmen with the objective of their traditional skill development, b) Academic training program to educate Conservationists, Architects, Engineers, contractors to incorporate craftsmen' knowledge in all stages of conservation, c) Specialized training programs for teachers, trainers and experts aiming at integrating practical experiences of people from different countries in exploration of the past.

The traditional practice of On-Site learning will be incorporated through on-site training sessions on live temple conservation projects. With the help of local bodies, periodic workshops will be arranged in local temples which would ensure public awareness. Through different workshops, short-term courses HSDC would exploit opportunities for shared training and education between craftspeople, architecture students, building professionals, and contractors.

Employment and Career Progression: To ensure fair and steady income, HSDC would provide its skilled workforce to ASI, State Archaeology, INTACH and other organizations which are responsible for conservation of historic structures, on a negotiated fee structure. The certified craftsmen can register themselves in Govt. supported or privately funded nodal agencies promoting conservation work. They can also provide their services as a resource person for workshops. HSDC can have retail outlet or rope in e-commerce Company to offer its platform to promote craftspeople and the products. To achieve long term sustainability of the crafts skill, HSDC will draw support from creative industries like Architecture and Interior Design schools and firms in creating collaborative platforms that will ensure design innovation and make the heritage skill relevant for not just conservation but the modern, competitive construction sector.

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